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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,417	05/09/2001	John Canning	CU-2503-RJS	4222

26530 7590 12/19/2002

LADAS & PARRY
224 SOUTH MICHIGAN AVENUE, SUITE 1200
CHICAGO, IL 60604

EXAMINER


KIANNI, KAVEH C

ART UNIT PAPER NUMBER

2877

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/831,417	CANNING ET AL.	
	Examiner	Art Unit	
	Kevin C Kianni	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 12-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because certain/essential numbered elements of the drawings in figures 1-3 are not textually labeled. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greene et al. (US 5506925).

Regarding claim 12, Greene teaches an optical device when subjected to localized heating (shown at least in fig. 1; abstract), wherein the device comprises an optical waveguide and a material which absorbs a predetermined wavelength of light (see col. 3, lines 36-44), the localized heating causing changes in optical properties of a region of the waveguide and occurring as a result of exposing the device to light of the predetermined wavelength at an energy level sufficient to heat the material (see col. 2, lines 57-col. 3, line 4; wherein the heating levels of material is shown in fig. 6), the

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material being arranged to transfer at least some of the heat to the region and to minimize optically-induce alterations of the waveguide whilst the device is exposed to the light (see col. 5, lines 28-48, more specifically lines 43-48; see also col. 4, line 54-col. 5, line 6). However, Greene does not specifically teach that the above change in properties of a region of the waveguide is permanent. It is well known to those of ordinary skill in the art that completely removing the effects of birefringence of a waveguide as well as a region surrounding it known to be permanent change in the properties of the material composing the waveguide or the region surrounding the waveguide, since choosing such a material for permanently changing of its properties would remove birefringence in the waveguide completely (see col. 3, lines 1-4).

With regard to claims13-15, Greene further teaches wherein the material is located outside and within the waveguide and wherein the material comprises a substrate on which the waveguide is formed (see at least fig. 1, the material comprising both waveguide and base layer located on substrate(s); see also col. 4, line 55-col. 5, line 6).

With regard to claims16, Greene further teaches wherein the device comprises an interferometric system and the waveguide comprises one arm of the interferometric system (see col. 4, lines 1-20).

With regard to claims 17, Greene further teaches wherein the localized heating causes thermal relaxation (see col. 1, lines 53-54 and col. 3, lines 1-4; wherein removing birefringence eliminates stress and relaxation), thermal diffusion or induces damage in the material (see col. 4, line 54-col. 5, line 6; see also fig. 6).

With regard to claims 18, Greene further teaches wherein the localized heating is used to write a grating structure in the waveguide (see col. 2, lines 35-53; wherein Green's heat radiation using TE/TM shown in fig. 1, causes writing grating structure on the waveguide as in fig. 1 and fig. 4).

Regarding claim 19, Greene teaches an optical device when subjected to localized heating (shown at least in fig. 1; abstract), wherein the device comprises an optical waveguide formed on a substrate (see fig. 1, item waveguide and substrate(s)) selected to absorb a predetermined wavelength of light (see col. 3, lines 36-44), the waveguide being selected to be substantially transparent to the predetermined wavelength (see col. 2, lines 2-8, wherein Green's waveguide is transparent to the selected wavelength light for energy absorption shown in at least fig. 3 and 4), wherein the localized heating causes changes in optical properties of a region of the waveguide, and occurs as a result of exposing the device to light of the predetermined wavelength at an energy level sufficient to heat the substrate (see col. 2, lines 57-col. 3, line 4; wherein the heating levels of material is shown in fig. 6). With respect to Green's teaching of the above change in properties of a region of the waveguide to be

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permanent, the arguments presented in rejection of claim 1, is analogous in rejection of claim 19.

With regard to claims 20, Greene further teaches wherein the predetermined wavelength of light is a sub-micron wavelength (see col. 3, lines 36-39; wherein the wavelength range of 193 nm is sub-micron wavelength).

With regard to claims 21, Greene further teaches wherein the predetermined wavelength of light is absorbed by the substrate substantially at an interface with the waveguide (see at least fig. 1, items waveguide, base layer and substrate(s); also col. 5, lines 28-48, more specifically lines 43-48; see also col. 4, line 54-col. 5, line 6).

Citation of Relevant Prior Art

3. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Suzuki et al. 5754714

Land 6067391

Fokine 6334018

Kristensen et al. 6151429

Ando et al. 6115514

Dragone et al. 5625723

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Smith 4515429

These references are cited herein to show the relevance of the apparatus/methods taught within this reference as prior art.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Cyrus Kianni whose telephone number is (703) 308-1216.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-7722, (for formal communications intended for entry)

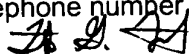
or:

(703) 308-7721, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

Kevin Cyrus Kianni
Patent Examiner
Group Art Unit 2877


Frank Font
Supervisory Patent Examiner
Group Art Unit 2877

December 1, 2002